

CLAIM AMENDMENTS

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Claim 1. (Currently Amended) A bump inspection apparatus for inspecting shapes of a plurality of bumps on an inspection object each of said bumps having a planar top portion, said bumps being formed into a substantially hemispherical shape by reflowing of solder, and said top portions of said bumps being shaped into a planar shape by a coining process, and said top portions of all of said bumps of said inspection object being on the same plane on an inspection object, comprising:

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an illumination optical system for illuminating said top portions with a parallel pencil of light vertical thereto through a telecentric optical system;

an observation optical system comprising a telecentric optical system having an optical axis thereof in conformity with that of said illumination optical system;

an observation portion for observing the images of said top portions in a predetermined range of said inspection object through said observation optical system; and

a processor unit for analyzing the shapes of said bumps on the basis of the images of said top portions from said observation portion;

said processor unit including analyzing means for analyzing the area of said planar top portion of each of said bumps, and judging means for judging whether or not the area of said top portion falls within a predetermined range.

Claim 2. (Canceled)

Claim 3. (Canceled)

Claim 4. (Currently Amended) A bump inspection method for inspecting shapes of a plurality of
bumps on an inspection object each of said bumps having a planar top portion, said
bumps being formed into a substantially hemispherical shape by reflowing of solder, and said
top portions of said bumps being shaped into a planar shape by a coining process, and said top
portions of all of said bumps of said inspection object being on the same plane
on an inspection object, comprising the steps of:

an illumination step of illuminating said top portions with a vertical
parallel pencil of light vertical thereto through a telecentric optical system;

an observation step of observing by a telecentric optical system having an
optical axis in conformity with that of said illumination optical system;

another observation step of observing the images of said top portions
within a predetermined range of said inspection object through said observation optical system;
and

a processing step of analyzing the shapes of said bumps on the basis of the
images of said top portions by said observation portion;

said processing step including an analyzing stage of analyzing the areas of
said planar top portions for said individual bumps and a judging stage of judging whether or not
the areas of said top portions are within a predetermined range.

Claim 5. (Canceled)

Claim 6. (Canceled)